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The Modern Office

By Peter Ricardo

Just installing the latest gadgets does not make an up-to-date office. Rather it is a question of so organising human beings that they work together effectively, in harmony, and with a greater sense of satisfaction.

OFFICE Administration Department tries to improve the effectiveness of I.C.I.'s offices. Some people will think of this as a dull subject concerned with systems and forms and monotonous routines. In fact the work can be of absorbing interest, always with fresh problems to be dealt with as new machines and devices or a reappraisal of old methods suggest better ways of doing things.

In common with other Head Office departments, O.A.D. (to use the familiar abbreviation) works by persuasion and advice rather than by direction. Its allies are the managers and clerks throughout the Company and its direct links the Office Administration units formed in most Divisions and Regions.

Just as an individual goes to his family doctor to keep in good health and just as the family doctor calls in specialist knowledge and medical research when necessary, so it is with an office. Every office can turn for help to its local O.A.D. practitioners. Both can call, when necessary, for a "second opinion" from O.A.D. at Head Office, where research into the best office methods is carried out, where training courses are organised, where the specialists are to be found and where the tailor-made answers to special problems are worked out.

Office Administration's work started in 1928, two years after the merger forming I.C.I. From this a store of knowledge has been built up for practically every office problem. New ideas are constantly being sifted. These 29 years have seen an outstanding growth in the size and complexity of I.C.I.'s business; but developments in ways of organising work and in the use of office machinery have kept pace.

What sort of problems confront O.A.D.? Let us choose Billingham and Nobel Divisions and look at three of the problems which they and O.A.D. have tackled together in recent years; many examples could be taken equally well from other Divisions.

Problem No. 1: How to cope with an increased volume of work at Billingham Distribution Department. Should the department be just expanded, or was a further reorganisation desirable?

This problem faced Billingham Division in 1952 and led to the work of their Distribution Department being reviewed. A full-scale overhaul was undertaken by O.A.D., and changes were introduced which resulted in a clerical staff smaller by 17% handling over 20% more orders.

The men who went about this overhaul job followed what might be called the classic O.A.D. techniques. Their first aim was to win the confidence of management and staff. Next they had to obtain a thorough understanding of the business being handled, which included defining the objectives of the department concerned. After this a detailed factual account of the procedures in use was compiled; the flow of documents from one place to another was charted and the purpose of each document and operation recorded. Lastly all this information was analysed in the light of the defined objectives and the why and wherefore of each piece of work scrutinised. Only then were new ideas sifted and suggestions formulated for improving the systems and organisation of the department.

At Billingham a very usual situation was found. A high percentage of orders was, in fact, "re-orders," containing information which was being typed again and again either for the same customer or the same product.

A simple "address plate" method was designed to eliminate this repetitive typing. These little metal plates are embossed with all the details of customers' addresses and with product descriptions, quantities, prices and values. They are used in various combinations over and over again to prepare different orders. Only information which varies from order to order is added by hand or by typewriter.

Three Times Faster

The comparison of different methods is greatly helped by various techniques which have been evolved for measuring clerical work. At Billingham measurement showed that by using address plates about forty fertilizer orders could be produced in an hour which previously took almost three hours to type.

This was only one of the changes made at Billingham; others included redesigning the flow of documents through the department, improving the layout and re-allocating duties between different sections. All were aimed at eliminating unnecessary movement and repetition of information. In this way the standard procedure was made to cater for the rule rather than the exception, and the time of skilled staff could be used for dealing with the unusual or exceptional order. So often the standard procedure is designed to cover every conceivable exception; inevitably, the simple orders are delayed or receive an amount of attention only warranted by the odd "black sheep."

Smoother Working

Finally, the organisational structure of the department was studied. The department adopted a new organisation chart which simplified the chain of command and gave smoother departmental working. All this led to better service for the customer.

Problem No. 2: How to find the quickest and most accurate method of working out the thousands of calculations involved in calculating wages, incentive bonuses and tax liabilities in order to pay several thousand people the right money each week.

This, of course, is an old problem; the wages system

Assembling an Elliott 405 Computer *at Borehamwood, Herts, to the special order of I.C.I.*

throughout the Company has been studied regularly and has been improved over many years, but the search for something better still goes on.

Nobel Division's methods were previously overhauled in 1949, when new accounting machines were introduced to reduce mental calculations and hand methods and to prepare each employee's pay document in one operation. Six of these new accounting machines were installed after the 1949 overhaul and have been used for rather more than two days each week to prepare the payroll alone. Bonuses—which have become an increasing part of wages work—were calculated by using ready reckoners.

The whole job was looked at again early in 1955. As a result, all these machines in their turn will be superseded later this year by the installation of an electronic computer.

Computer's First Job

The first job planned for the computer is the preparation of the payroll for Ardeer's 6500 *employees. This will occupy the machine for less than a day.* The related jobs of calculating incentive bonus payments and of labour costs analysis will become part of the redesigned wages procedure and will keep it busy for another two days. It will still have time to spare to do other work; this is now being investigated, and the computer will be able to take on other jobs next year, when the wages procedure should be well established.

Although I.C.I. is well to the forefront in developing the use of electronic computers for office work and has had teams visiting the U.S.A. and the Continent to study them, it would be quite wrong to assume that these computers will revolutionise office work overnight. Most of them were developed primarily for statistical and research work; their modification to make them suitable for dealing with office work in bulk will take time, as will their integration into the existing systems of the Company.

Valuable Information

As computers operate at very high speeds, they will be able to produce information of great value to management which cannot be prepared in time or economically by hand or by existing machines. They will certainly entail problems of reorganisation and transfer of staff, for which solutions will have to be found by planning ahead. So it is not surprising that possible uses for them are being studied with both care and eagerness.

It must not be assumed, however, that the trend is always towards bigger and faster machines. There are many jobs in offices where machines are not applicable and where the human brain and hand can beat the machine.

Problem No. 3. *How to take the tedium and expense out of store book-keeping.*

O.A.D. has now evolved a system of storekeeping known as "visual control." The general stores in a works the size of Ardeer holds 8000 items—bolts and nuts, tubing, pipe fittings, clothing and tools for workshop use, to name only a few. Over 600 issues are made each day from these stocks. Even a small works in I.C.I. may hold 4000 items in its stores. All these must be accounted for and supplies ordered in good time, otherwise a plant may break down and be stopped for lack of a spare.

Tidy Layout

As in most companies, I.C.I. supply departments have operated many excellent systems of stores ledgers, with receipts and issues posted in detail. These have successfully provided for the control of stocks, re-ordering and accounting. But the documents and clerical work needed have sometimes been out of proportion to the value of these general stores, which are only $7\frac{1}{2}\%$ of the Company's total purchases.

The new answer—visual control—is based on tidy layout of stores. Certain quantities of the stock of each item are marked with coloured tabs. When stock falls to the quantity with a yellow tab a re-order must be considered. A smaller minimum stock is marked red to show that the danger level has been reached. These quantities are separated from the free stock. The storekeeper can then readily see when his stock is getting low. He has a simplified re-order card, usually hung in a polythene wallet on the shelf or bin or on the stock itself. When the stock falls to the re-order level the storekeeper sends his card to the Supply Department, who can assess consumption by looking at the date and quantity of the last order on the card and place fresh orders on the suppliers.

Keener Interest

This simple idea is modified in various ways to suit different works and stores. Combined with an easier way of valuing and accounting for stocks in groups

(*Continued on page* 227)

One man and his job—53

Trouble Shooter

THE TROUBLE SHOOTER—an old Robert Mitchum film—was showing at the local cinema the week I was up at Wilton to interview Steve Beadnall. Steve's job at Wilton? He too is a trouble shooter. A fantastic coincidence, but true.

Steve, I was relieved to find, bore little resemblance to his Hollywood namesake. He described his job to me as "a sort of insurance policy." His main preoccupation is the daily checking of all the pipes carrying water, steam and other services to the process plants on the Wilton Site.

"We've got no less than 21 plants in operation. Two more, including the new nylon plant, which will be the largest of the lot, are under construction," Steve explained. Steve is one of the 200 men employed on Distributed Services Section. Their function in life is to ensure that essential services are produced and distributed precisely as they are needed.

There must be scores of miles of pipeline on the Wilton Site. The gas, air, nitrogen, steam and water pipes, which are the responsibility of Steve and his fellow trouble shooters, account for about half the total pipe mileage. Steve and his assistant Bill Phillips form one of the four teams which keep a round-the-clock watch on the Site. In a normal eight-hour shift they reckon to inspect all possible trouble points at least twice. Their beat comprises not only the 2000-acre Wilton estate but also a reservoir up in the Eston Hills above Wilton Castle and effluent installations down on the Tees estuary about a mile to the north of the works.

The trouble shooters on their bright yellow painted motor bikes are a familiar sight around the works. On duty they wear protective overalls and crash helmets, and with their yellow bikes they could almost be mistaken for an A.A. patrol. In fact there is quite a lot in common between the two jobs.

Steve told me that he delegates the outside inspection—the reservoirs and the effluent stations—to Bill Phillips, and he himself covers the factory area. Between them Bill and Steve estimate that they must cover at least 10,000 miles a year patrolling at Wilton.

As we strolled down Queen's Avenue towards the power station building Bill Phillips passed us on his bike.

"All O.K.?" queried Steve. Bill gave the thumbs-up signal and continued on his way. Bill had just been up to check the reservoir in the hills above the Castle, Steve explained.

Water is one of their biggest headaches. It is not a question of burst mains, although this has been known to happen, but the basic fact that to an expanding Wilton water is a precious commodity. Special permission has to be obtained before any new supply of Tees Valley potable water can be drawn through the mains either by the process plants or by contractors working on the site. It falls to the trouble shooter's lot both to keep a careful check on the reservoir level and to look out for any unauthorised use of water around the Site. "TV Steve they call me these days," he said with a grin.

By this time we were standing in the observation room on top of the power station building. Down below was the huge pipe trench which runs the length of Queen's Avenue. Steve drew my attention to a small pipeline feeding paraxylene to the 'Terylene' Plant. Since paraxylene solidifies at normal air temperatures this line is steam heated to keep it flowing freely. "So that is one steam main we just cannot afford to have going wrong," commented Steve. I saw his point.

Steve and his fellow trouble shooters probably know as much about the Wilton Site as anyone else there. He started at Wilton in 1949, when there were only two plants working on the Site, and has in his own words "grown up with the place." I asked Steve when the last bad patch of trouble had occurred. He thought for a moment. "Well," he said, "we had a bad burst about two years ago which cut off the normal water supply for about eight hours." If this was the worst, it seemed pretty good to me. A.E.B.

Steve Beadnall

Central Council

A unanimous demand for examination of payment of employees' wages through a bank and a resolution in favour of reducing the service qualification for promotion to Staff Grade from three years' to eighteen months' continuous service—these were the highlights of the Central Council meeting held at the Royal Festival Hall, London, at the end of May.

Sketches by Sallon

THE sophisticated and restless architecture of the Royal Festival Hall, with its somewhat jaded air of *avant-garde*, seemed a strange setting in which to find our old and conservative friend Central Council. But there they all were, meeting for the first time in London since 1939—central councillors representing both payroll workers and management, their numbers swollen by observers "reporting back," sitting in the stalls with the Board of I.C.I. facing them on the stage. The great hall was barely half full, and it was an atmosphere hardly conducive to fiery polemics. Indeed, restraint seemed the order of the day until the meeting came to life late in the afternoon on two motions concerning Staff Grade status for payroll workers.

The first motion (from Metals Division) wanted "automatic granting of Staff Grade status to all payroll employees with a reasonable period of service qualification," a step which, it was claimed, would bring the Company into line with other industries in this respect, although subsequent discussion did not make quite clear which particular industries the movers of the resolution had in mind.

The sponsor of this resolution, Mr. Lissiman of Metals Division, emphasised that I.C.I. should lead the way, not tag behind. Mr. Fowles of Alkali Division, supporting the motion, quoted the *Magazine* in support of his case, recalling the words which Mr. P. C. Allen used when, in addressing the Institution of Works Managers, he forecast the evolution of industry along the lines of a gradual blurring of the old divisions between staff and payroll workers.

By degrees the discussion crystallised on clearer lines. On the one hand there was the view that automatic Staff Grade would bring quicker encouragement to youth and to a good man. "Moreover," said one speaker, "we are all human . . . there may sometimes be cases of personal opposition by engineers and plant managers to a particular nomination." On the other hand, there was the view—and the view which finally won the day—that the change might well be a change for the worse.

As one management representative put it, "when people don't get Staff Grade it can cause trouble on the shop floor. But that is not half so bad as the trouble created when you have to get a man struck *off* Staff Grade." Selection after a probationary period was therefore, in his opinion, essential.

E. R. Lightfoot

Mr. Stuart of Alkali Division made, too, a neat point when he turned the tables on the speaker who invoked Mr. P. C. Allen's views in support of the motion. "Progress," said Mr. Stuart, "towards blurring the division between staff and workers must begin at the top end of the scale with your best man, and not at the bottom."

Put to the vote, the motion was lost by 54 votes and therefore referred back to Divisions for further consideration. This was surely a triumph for common sense.

The next Staff Grade motion before Council was the Billingham Division one "that the service qualification for promotion to Staff Grade be reduced from three years' service to eighteen months' continuous service." This motion had a surprisingly smooth passage and from the start evidently commanded wide sympathy. "If a plant manager cannot assess a man's ability in eighteen months, another eighteen

Dr. R. Beeching

months won't help him very much," said Mr. Allardyce of Billingham Division.

Sympathy for the motion became clinched when Mr. Payn, Works Manager of Ammonia Works, Billingham Division, gave Council the benefit of his long experience. Eighteen months, he said quite frankly, is long enough to make an assessment. Furthermore, the change would not involve sweeping consequences; a rough calculation of the position for his Division showed that the reduction of the probation period to eighteen months would probably entail not more than a 3% increase in the number admitted to Staff Grade.

The motion was carried by a substantial majority, but nevertheless there were more than ten dissentient votes, and so, like its predecessor, it is again going back to Divisions before coming up at the next Council.

The debate was wound up by a few words from the Chief Labour Officer, Mr. E. T. Grint. He reminded Council that there was today no barrier, other than age limit and probationary period, to the attainment of Staff Grade; 83% of those eligible were now on Staff Grade and, since the abolition of the quota system in January 1954, the numbers on Staff Grade had risen from 26,000 to 46,000.

This valuable and in many ways wise discussion on a matter that is of great importance to payroll workers followed an announcement by Mr. Hill, Head of Pensions Department, on improvements in Workers' Pension Fund benefits. Details of these improvements are set out on page 227, but it is worth while recording here the background against which they have been made.

Mr. Hill reminded Council of the principles of the Workers' Pension Fund machinery. All pension benefits were strictly geared to workers' contributions. The Company's approach to the problem of inadequate pensions in the world of rising prices and the falling value of the pound was to put a new valuation on a part of a man's backlog of contributions and thereby to provide a yardstick for gearing up higher pension benefits. All contributions before April 1946 were therefore to be up-valued by 50% instead of the present 10%, and those from April 1946 to April 1951 were to be up-valued by 10%. By these means the worker paying contributions over a longer number of years and therefore suffering most on retirement from the falling value of money would be the most benefited.

The last actuarial valuation of the pension fund, said Mr. Hill, had shown a surplus of £640,000, but the new benefit rates would cost the Company £3⅜ million, payable at the rate of approximately £250,000 a year for nearly twenty years. Such generosity on the part of the Company was of course received with warm feelings of appreciation.

This announcement followed an opening address by the Chairman, Sir Alexander Fleck. His speech drew a serious picture of present-day competitive conditions and gave some striking examples of the lower returns which the Company was receiving for some of its products at a time when costs had greatly increased.

The first example Sir Alexander gave was of a dyestuff. It was sold on the continent of Europe in 1950 at about 13s. 9d. per lb.; today, if we wished to sell that same dyestuff on the same market, we could only realise 10s. 8d. Another instance was of a plastic for which in 1950 the export price was 3s. 3d. per lb.; today in certain markets competitive quotations were as low as 2s. 4½d. And in this seven-year period since 1950, with "its tale

A. H. Knox

of lower realisations," production costs had risen by 24%.

The Chairman went on to make some very pertinent remarks on the prospects for I.C.I. if the present European scheme for a common market were realised. The common market scheme, into which France, Italy, Western Germany, Belgium, Holland and Luxemburg are about to enter, would establish a common market behind a single tariff wall embracing about 160,000,000 people with a gross national income twice as large as that of Britain. And a wider European market, which Britain and other European countries propose to associate with this common market in the form of a low tariff area, would result in an economic group containing some 250,000,000 people—that is to say, a group 50% larger than the population of the United States. From such a development Britain simply could not afford to remain aloof.

"Certain industries and certain firms within industries may feel a very keen wind of competition," said the Chairman, but we in the British chemical industry, with our fine achievements in research and with our access to all the main raw materials for heavy chemicals grouped conveniently within reach of fine ports, should not feel apprehensive about our ability to compete.

On the subject of canteens Mr. E. T. Grint, Chief Labour Officer, had an encouraging statement to make. He reminded Council that the Company's policy was to try to provide a standard meal at a standard price, 80% being for food and the remaining 20% going towards wages. Therefore if food prices went up, canteen prices might have to rise. Food costs did in fact increase during 1956—by 4% according to the Ministry of Labour Cost of Food Index, which the Company is using as a guide—but nevertheless the Board had decided *not* to increase canteen prices at present, partly because increased efficiency has helped to offset higher costs.

Miss M. Fitzpatrick

R. E. Pickering

Mr. Grint reminded Council that I.C.I. canteen prices have remained stable since May 1953, a period during which the cost of living index has increased by almost 15% and the wages of canteen workers by over 29%.

There were a few other matters which ought to be recorded. One was a motion by Mr. T. McCall of Nobel Division that the *Magazine* should consider having a section dealing with the activities of the young people in the Company. Few would quarrel with this, but the Editor was doubtful about its feasibility because of the difficulty of finding enough things to say or photographs to take which would command general interest. He thought that perhaps the Divisional newspaper might provide a better publicity medium, but promised to consider the matter further.

The meeting ended with a very interesting motion from Wilton Council which was carried unanimously. It asked the Company to investigate the possibility of paying employees' wages through a bank. Mr. Goodsell, who sponsored the motion, pointed out that every week several hundred people at Wilton spent three hours on their off-day travelling to and from the works just to collect their wages in order (he alleged) to take advantage of lower mid-week shopping prices. Several other speakers supported the motion on the grounds that it would make saving easier.

Finally, mention should be made of the very successful trip by launch to the Greenwich Royal Naval College organised by Miss Webster and of the lucid explanation of I.C.I.'s accounts given to Council by Mr. P. T. Menzies, I.C.I. Finance Director. R.M.K.

WORKERS' PENSION INCREASES

A PENSION from the Workers' Pension Fund is a direct proportion of the contributions paid by the member or credited to him by the Company in respect of back service. The annual pension is in fact two-fifths of such total contributions. If, for example, at retirement the contributions amount to £250 the pension is £100 a year, or just under £2 a week. Contributions to the Fund are 2½%, or 6d. in the £ on wages.

It will be seen from this that pensions are directly related to wages earned throughout service. This means that that part of the pension earned up to a few years ago is not in line with present values. The decision to increase the value of earlier contributions is designed to step up the pension earned in respect of earlier service and so counterbalance to some extent the effects of inflation.

For the purpose of calculating present and future pensions:

1. The value of contributions paid or credited up to 31st March 1946 will be increased by 50% instead of the present increase of 10%.
2. The value of contributions paid or credited between 1st April 1946 and 31st March 1951 will be increased by 10%.

Minimum pensions will be increased as follows:

For members:
From 15/– to £1 per week.

For widows and children:
The minimum total will be increased from 10s. per week for the widow plus 5s. per week for each child, to 12s. 6d. plus 6s. 3d. per week respectively, subject to such total not exceeding the members' pension.

A simple example will show how a pension granted at any time up to 31st March 1946 has already been increased and the extent to which it will be increased again from 1st July:

Original pension (say)	£1 10s. 0d.
From 1948 to 1952 this was increased to	£1 13s. 0d.
From 1952 this was further increased to	£1 19s. 7d.
New pension from 1st July 1957 ..	£2 14s. 0d.

In the example quoted above the latest increase amounts to about 36%, which is the maximum percentage increase and applies to all retirements, except where minimum pensions apply, up to 31st March 1946. For retirements since that date and for retirements in the future the extent of the percentage increase will depend mainly on the amount of the individual's contributions up to March 1946, and to a lesser extent on contributions between April 1946 and March 1951. The following actual individual cases, all of whom had approximately 30 years' pensionable service at retirement, give an indication of the order of the percentage increases for retirements during the last few years:

Mr. A (retired in 1954)	Increase 25%
Mr. B (retired in 1955)	Increase 23%
Mr. C (retired in 1956)	Increase 21½%
Mr. D (retired in 1957)	Increase 20%

Death Benefits

1. The increases in the value of contributions referred to above will also apply from 1st July 1957 for the purpose of calculating lump sum Death Benefits 6 and 7.
2. The following new benefit is being introduced from 1st July 1957:
   Where a male contributing member who is covered for widows' and children's benefits dies with less than 10 years' pensionable service, but leaving a widow or children under age 18, a cash payment equal to his contributions, together with interest, will be paid to the widow or children This is in addition to the death benefit (refund of contributions, plus interest) payable to the member's estate under the existing rules.

Option to take Widows' and Children's Pensions

During the period 1st July 1957 to 31st December 1957 those male members (including pensioners) of the Fund who in 1952 did not elect to be covered for widows' and children's pensions will have a final opportunity of doing so.

THE MODERN OFFICE (*continued from page 221*)

instead of as individual items, detailed stock records in the office are eliminated. Storekeepers take a keener interest in their work; stock replenishments can be ordered and urged more readily by looking at the physical stock than by referring to a stock record card, with the inevitable delays and inaccuracies of postings. And paper work is reduced.

Better systems and new machines, however, are of no use by themselves. They are the tools of the people who work them, and these people must be organised in suitable groups. Each office must have its proper place in the framework of the Company. The study of the theory of organisation and its practice in a large commercial enterprise such as I.C.I. takes much of the time of the senior people engaged in office administration.

Problems of organisation crop up repeatedly in surveys. To find the right organisation is important because the ways in which staff are grouped together to work in teams and the flow of work to them obviously affect the amount of work they can do and the satisfaction they get from their jobs.

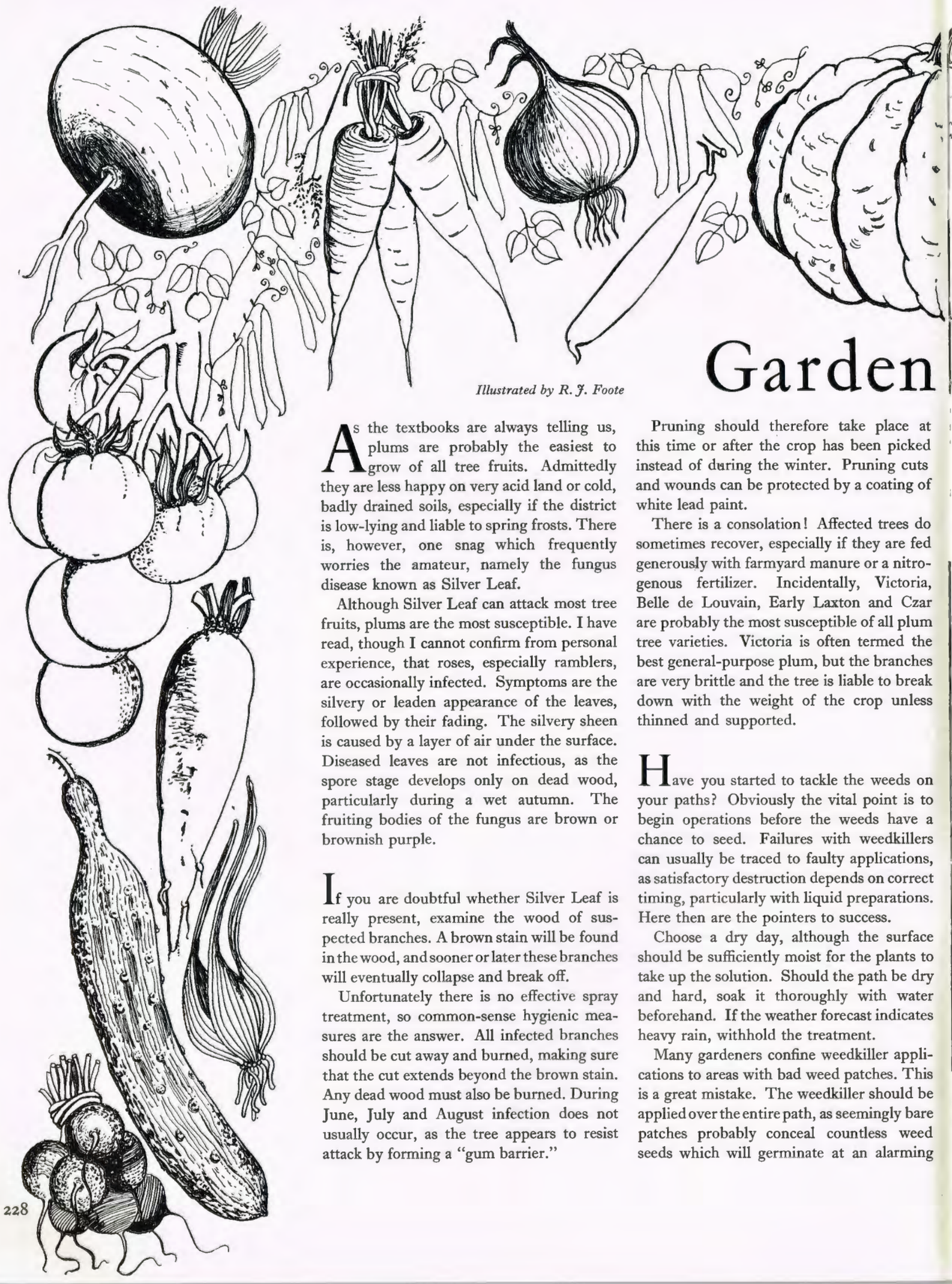
There are many possible ways of organising the work of, say, a distribution department in a Division. Which way is best, and what factors affect the choice? The answer varies with the circumstances.

Sometimes it is best for one section to deal with all matters concerning a single range of products, including control of warehouse stocks, checking customers' orders (both home and export), despatch, transport, invoicing and so on. This is known as "vertical" organisation. Sometimes it is better to group work "horizontally" by functions, so that one stock section keeps the records for all products, while a separate section issues every invoice. Or there may be a mixture of these two forms of organisation, the stock section keeping all the stock records and the other duties being divided either between home and export work, or by product groups, or by geographical market areas for the export work.

What work can best be done centrally in a distribution centre at a Division headquarters and what is better carried out locally close to the plants and despatch points at outlying factories? What factors affect the size of a working section to get the best conditions and results? What sort of decisions are best left to be taken at works level? These points well repay study.

There are no standard answers to such questions. There are, however guides to the points which must be assessed in each individual case. The probable advantages and disadvantages can be listed for each form of organisation, and with experience this helps managers to judge what will best suit the needs of a department.

For example, people tend to work more happily in a "vertical" section with perhaps seven or eight colleagues where they can see the job right through, where queries can be settled more quickly, and where there is less movement of paper between sections. Expensive machines, however, or the specialised knowledge and skills of individuals can sometimes be employed better on a particular type of work in "horizontal" sections.



Illustrated by R. J. Foote

Garden Notes

By Philip Harvey

As the textbooks are always telling us, plums are probably the easiest to grow of all tree fruits. Admittedly they are less happy on very acid land or cold, badly drained soils, especially if the district is low-lying and liable to spring frosts. There is, however, one snag which frequently worries the amateur, namely the fungus disease known as Silver Leaf.

Although Silver Leaf can attack most tree fruits, plums are the most susceptible. I have read, though I cannot confirm from personal experience, that roses, especially ramblers, are occasionally infected. Symptoms are the silvery or leaden appearance of the leaves, followed by their fading. The silvery sheen is caused by a layer of air under the surface. Diseased leaves are not infectious, as the spore stage develops only on dead wood, particularly during a wet autumn. The fruiting bodies of the fungus are brown or brownish purple.

If you are doubtful whether Silver Leaf is really present, examine the wood of suspected branches. A brown stain will be found in the wood, and sooner or later these branches will eventually collapse and break off.

Unfortunately there is no effective spray treatment, so common-sense hygienic measures are the answer. All infected branches should be cut away and burned, making sure that the cut extends beyond the brown stain. Any dead wood must also be burned. During June, July and August infection does not usually occur, as the tree appears to resist attack by forming a "gum barrier."

Pruning should therefore take place at this time or after the crop has been picked instead of during the winter. Pruning cuts and wounds can be protected by a coating of white lead paint.

There is a consolation! Affected trees do sometimes recover, especially if they are fed generously with farmyard manure or a nitrogenous fertilizer. Incidentally, Victoria, Belle de Louvain, Early Laxton and Czar are probably the most susceptible of all plum tree varieties. Victoria is often termed the best general-purpose plum, but the branches are very brittle and the tree is liable to break down with the weight of the crop unless thinned and supported.

Have you started to tackle the weeds on your paths? Obviously the vital point is to begin operations before the weeds have a chance to seed. Failures with weedkillers can usually be traced to faulty applications, as satisfactory destruction depends on correct timing, particularly with liquid preparations. Here then are the pointers to success.

Choose a dry day, although the surface should be sufficiently moist for the plants to take up the solution. Should the path be dry and hard, soak it thoroughly with water beforehand. If the weather forecast indicates heavy rain, withhold the treatment.

Many gardeners confine weedkiller applications to areas with bad weed patches. This is a great mistake. The weedkiller should be applied over the entire path, as seemingly bare patches probably conceal countless weed seeds which will germinate at an alarming rate if these areas are left untreated. A phenol-type weedkiller such as 'Abol' Double Strength is excellent for paths and is particularly effective against moss, which does not respond to sodium chlorate.

Sodium chlorate is, of course, widely used for paths and drives. The residual effect is considerable, and for this reason treated areas must not be sown or planted up for six months, as it kills all vegetation except, as already stated, moss. Sodium chlorate can persist even longer on heavy clay soils. For example, on my heavy land treated areas are often clean for about nine months.

The fire hazard associated with chlorate is relatively small in our cool climate. Any clothing which has been accidentally soaked with a solution of this material must be thoroughly rinsed with water, as a spark or even friction can ignite clothing, straw, etc., which has been allowed to dry out. However, you can avoid all this by using 'Atlacide,' which incorporates a fire depressant and does away with the need for mixing with water, as it is simply dusted on to the foliage of the weeds.

Ants are often a great nuisance during July, especially on light, sandy soils. Everyone is familiar with these creatures, but the full extent of their depredations is by no means always realised. They act as carriers for aphids, transporting them from one plant to another. Ants also swarm over many plants to obtain the "honey-dew" excreted by aphids. They form nests under rockery stones, shrubs and rose trees, causing the roots to loosen from the soil so that the plants wilt or even die. Ants also collect seed sown in frames and greenhouses.

There is no need to resort to a highly inflammable material like carbon disulphide, as BHC and DDT insecticides will eradicate these pests, provided you persist with the treatment. The dust should be applied liberally at the entrances to the nests or other areas where the ants congregate. Do not expect a quick knock-down effect, as results are gradual. If you apply the insecticide at say ten o'clock in the morning and return after lunch to the same spot to find the ground a dense mass of ants, there is no need to be dismayed. The original application will have killed the ants after they scurried away, and you are simply seeing a fresh invasion which must be dealt with in the same way.

I am often asked if there is any way of prolonging the life of cut roses. So far I have not discovered any chemical compound which can be unreservedly commended. Nevertheless, there are certain other methods which will help your roses to last better. Never cut rose blooms, or indeed any flowers, during very hot weather. Make a slanting rather than a horizontal cut, as this allows a larger area of cut surface for water absorption. Place the blooms in deep water as soon as possible after cutting and remove the lowest leaves, as they eventually decay and encourage bacteria which block the cells. There is no evidence that removal of thorns or splitting the stems is of any practical value.

Rubber in the Raw

By C. B. Taylor

Vital to the future of the country, Malayan rubber trees are tended as carefully as a dairy-farmers' cows. The milky-white latex is collected daily by the "dairymaids" and then processed almost as in cheese-making.

DAWN does not come early in Malaya, and it is still dark as Veerappan, sharp knife in hand, ambles down between the rows of rubber trees to begin his allocated task of tapping the trees and thus to start the flow of latex, that milky white juice which later everyone will know as rubber.

Veerappan is an Indian, a Tamil from southern India, and over the two million acres in Malaya which comprise the large estates others of his compatriots, male and female, likewise start this same morning duty. A further 350,000 Chinese and Malays also arise at this early hour to tap trees of their own smallholdings of another one and a half million acres.

As Veerappan crouches over the tree or perches on his step ladder, skilfully paring off a thin piece of bark—which must not be cut too deep to damage the tree, nor too shallow to be ineffective, nor too thick to waste the precious bark—he watches the globules of latex exude from the tree, coalesce and run as a milky stream into the small pot, cup or half-coconut shell fixed in the trunk below. Perhaps he may remember the time ten or more years ago when he, his father and his bride laboured in the hot sun planting the seedlings.

It is doubtful whether Veerappan understands that the new trees he was helping to nurture were the results of years of research work carried out by the Rubber Research Institute of Malaya, by selecting and breeding trees which would yield four or five times as much rubber as those old seedling trees in the smallholdings near his *kampong* (village), and that the very future of Malaya depends on growing more and more of these high-yielding trees in order to face the imminent threat of competitive synthetically produced rubber.

Soon the sun is well up and the latex has ceased to flow from the trees. The "dairymaids" arrive with buckets, one at each end of a light pole balanced gently over the shoulder.

Ah Chit Wah and her friends file left and right, each taking a row of trees. The small latex cups are emptied into the buckets, and the cups are wiped clean and replaced upside down on their tree hooks against contamination by dirt and rain until the morrow.

The buckets are now full and Ah Chit Wah walks with short smooth steps, her precious load well balanced on her shoulder, to take them to the roadside, where the contents will be emptied into a tank wagon and taken to the estate factory.

Ah Chit Wah also is a skilled tapper, and recently she has been given a tin of the magic *obat* (medicine) and has been instructed how to paint a thin film of the greasy substance on to the bark of the trees in the place where she will cut off thin strips on each tapping day for the next six months. She has never heard of the substance 2,4,5-trichlorophenoxy acetic acid, nor that it is now used widely as a weedkiller, but she will soon observe with her own eyes that the *obat*, a product of scientific research, is stimulating the yield of latex

Tapping the tree. *Globules of latex exude from the tree, coalesce and run as a milky stream into a small pot fixed in the trunk below.*

Gathering the latex. *The sun is well up and the latex has ceased to flow. It is now time to gather it in, and the "dairy maids" arrive with buckets slung on poles over the shoulder.*

and that she may have to hang an extra latex cup on the tree to catch the increased flow. She does not know why 2,4,5-T should make the tree produce more latex; but, strangely enough, neither does the scientist.

The road tank wagon has now arrived at the factory buildings, a stone's throw from the manager's bungalow. The buildings are not impressive but somehow slightly reminiscent of the cheese factories scattered around the villages of eastern Canada. Inside the resemblance in form and process is indeed remarkable, since latex and milk have much in common.

Plant conductor (foreman) Kanniah and his fellow Indians stand by the long, scrupulously clean aluminium tank watching the latex surge in through the pipe from the overhead storage container. The tank is full, and Kanniah is pouring in the measured amount of formic acid which will coagulate the rubber solids—how reminiscent the process is to adding the starter culture of bacteria to milk in the larger cheese factories in Britain! Labourers are stirring the latex vigorously with wooden paddles, and others are standing by with sheets of aluminium which they soon will drop into grooves, crossways in the tank, dividing it into sections of some three inches each.

The next day Kanniah and his men return; coagulation is complete, and the sections are removed. The "curds" are now seen as slabs of rubber, and the serum ("whey") is drained off from below. The analogy with the dairy industry ceases, and we are now more reminded of the steel rolling mills of Sheffield.

The slabs of rubber are squeezed through metal rollers, elongating as they run, while jets of water wash off residual contaminating acid. Then they pass through another set of rollers more tightly adjusted, so that the rubber is further squeezed and elongated and is by now no longer a slab but a sheet of rubber. There is a scurrying to check length and thickness and, the standard having been obtained, the sheet and its fellows are transported to the smokehouse. So is preservation obtained.

What a difference in standard this is from that which is employed by the thousands of Chinese, Malay and Indian smallholders! No gleaming aluminium tanks for them, but maybe a set of tins made from four-gallon paraffin cans in which coagulation is carried out, and rollers more reminiscent of those used by the old-time washerwoman, with an iron handle and rattling cast iron cogwheels.

The rubber produced may be of inferior quality, but at the present time it provides these smallholders with a good source of income. May the time not come again when, as in 1932, the price of rubber dropped to 2d. per lb.

Maybe next week the market conditions will be different again, and the demand will be for concentrated latex to ship abroad to the foam rubber manufacturers. Kanniah and his dark-skinned fellows must then change their operations. In another section of the factory stand brightly polished centrifuges, giant power-driven, high-speed models of those farmhouse cream separators whose high-pitched whine awakes the late-sleeping city visitor. The latex streams into the bowls of the centrifuges, and from one spout flows the "cream," the concentrated latex from which much of the water has been removed and in which there is a rubber content of some 60%. From the other spout streams the "skim."

The transport of this precious concentrated liquid is highly organised. Special rail tank wagons, in appearance similar to the milk wagons which rattle over the tracks of British Railways in the dark hours, carry the latex to Singapore or Port Swettenham, where it is pumped into ocean-going liners.

Latex in the factory. *A measured amount of formic acid is here being poured into the tank to coagulate the rubber solids, a process akin to that of adding starter culture to milk to make cheese.*

Where does Imperial Chemical Industries (Malaya) Ltd. come into all this rubber business? The answer is, from start to finish. The staff of the Agricultural Advisory Department visit a high proportion of the larger estates in Malaya to give advice.

Following the recognition that the use of fertilizers is essential to hasten the growth of the young tree and to maintain high yields of latex, I.C.I. (Malaya) Ltd. provides a considerable range of fertilizer mixtures to estates and, through Government subsidy, to the smallholder. The demand for fertilizers is now steadily increasing. Weed control by hand labour is becoming more expensive due to increased wages, and now for this purpose larger quantities of weedkiller are sold.

Insects may ravage the leaves of the cover crops under the young rubber trees, and these can be controlled by I.C.I. 'Gammexane' products. A certain fungus attacks the trees, producing a pink colour and causing dieback of the branches ("pink disease"); another attacks the bark of the tree on the tapping "panel" ("mouldy rot"). These fungi can be eradicated by 'Fylomac' 90, an I.C.I. fungicide.

Much as milk is easily and quickly soured by bacteria, so is latex rapidly soured and made useless. It cannot be heat treated to obtain preservation through partial or complete sterilisation, and most of the common chemical preservatives cannot be used, because the properties of the rubber produced finally are affected by their use.

Ammonia gas (a Billingham product) has been found to be a pre-eminent preservative, and where storage of latex is necessary this substance is invariably used. For coagulation, formic acid, acetic acid, sulphuric acid, or calcium chloride is employed. Sodium bisulphite is used as a bleaching agent; sodium sulphite and formaldehyde are alternative preservatives; and *p*-nitrophenol is a fungicide for sheet rubber.

The "curds" are now slabs of rubber *and the serum ("whey") is drained off from below*

Cresta Run

By R. C. Todhunter

I SUPPOSE that anyone who is interested in sport has at times hugged to himself certain secret ambitions, whether it be to make a century at Lord's or to catch a 40 lb. salmon; to go round Walton Heath in 72, or to ride the Cresta. As the years creep on, the attainment of each of these dreams becomes more remote, and they drop off one by one like dead leaves into the limbo of the might-have-been.

In my case it was the Cresta. To those who have not seen it I should explain that this is the famous ice run built over sixty years ago by the St. Moritz Tobogganning Club. It is three-quarters of a mile long from Top, with a total drop of 514ft. The steepest part—called Church Leap—is 1 in 2·8, and there are ten banked corners, each with its own name, the two most famous being called Battledore and Shuttlecock.

You ride the Cresta on a small toboggan called a skeleton, on which you lie on your stomach on a sliding seat, with your nose about six inches from the ice. The skeleton has two polished steel runners, and the only method of steering it is to lean over to one side or to push the front round while raking with one foot. Great skill is required to steer it successfully, and failure to do so means that you fly out over the top of one of the banks, like a stone from a sling. The record time for the run from Top is just over 56 seconds, and the finishing speed can be anything up to 75 miles per hour.

No ladies have been allowed to ride since 1926, but there was a famous day when a horse got into the run a little way from Top. No one knows how he did it. Perhaps he was out for a Sunday morning stroll; but whatever the cause, he was off down the run in a flash.

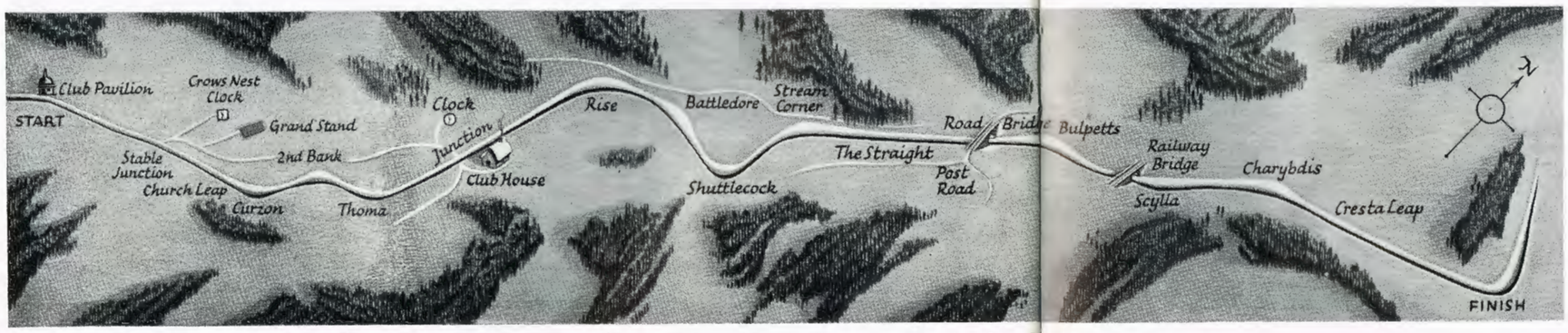
Wisely he sat down, and considering the speed he gathered down Church Leap, all the experts agreed that he took the first three banks like a champion. As he tore through Junction, emitting a slight trail of smoke, he looked around him, puzzled but not disturbed. Unfortunately he failed to pay attention to the loud cries of "Rake!" from either bank as he tore into Rise, which he negotiated safely. Alas, inexperience then betrayed him, and for the first time he looked perturbed, as well he might. He failed to take Battledore early enough, and hitting Shuttlecock with a grunt of alarm, he went soaring out. He was later led into the Shuttlecock Dinner, covered in medals.

It is not surprising that this was one of the ambitions that I had long put away as unrealisable. I was well over 50. I had only once been to Switzerland, 25 years previously, and I had never even seen the Cresta.

But then fate took a hand in the form of a young Cresta enthusiast called John who came to stay for the week-end. Now a golf maniac or a huntin' fiend is bad enough, but a man bitten by the Cresta bug is almost unique. From Christmas onwards he thinks and dreams of nothing else. All my protestations of senility were brushed aside. John plied me with literature and drowned me in propaganda. Battledore and Shuttlecock became as familiar as blood brothers.

My more sober friends told me not to be a silly old man. They pointed out that I might be old but was not yet in my second childhood. With their support I resisted all blandishments until a fatal cocktail party at which my defences were finally pierced by an article

The author about to take off *from Junction, the beginners' starting point one-third of the way down the run. Quite a crowd has gathered to see the fun.*



Cresta Run *is ¾ of a mile long with a total drop of 514 ft. Steepest part is 1 in 2·8, and there are 10 banked corners.*

Full speed ahead. *To you and me it is a toboggan, but the Cresta man calls it a skeleton. You lie on your stomach on a sliding seat, with your nose about six inches from the ice.*

by Lord Brabazon—the Grand Old Man of the Cresta—in which he said "I guarantee that anyone can get down the Cresta without hurting themselves if they behave sensibly." So before I knew where I was, I was on my way to St. Moritz with John, committed to this awful thing and knowing that once there I should be too frightened *not* to go down!

We arrived late on Friday night, and my head had hardly hit the pillow before the telephone jangled me into wakefulness at 7.30—on John's instructions—so that we could be up at the start before 8.30, the official starting time. We walked up the hill together, and I saw the Cresta for the first time, sinister in the morning sun like a silver snake, pure ice and horrifyingly steep.

As we topped the hill, John shouted our names to Mr. MacCarthy, the starter, secretary, organiser and grand panjandrum of the run, and I was finally committed. John then took me into the club hut, where I was arrayed for the battle in the Cresta armour of helmet, chinpad, kneepads, elbow pads, handguards, and boots with rakes on them, until I looked like a rather insignificant American footballer. Dressed liked this, I lay on my stomach on a skeleton in the hut while John showed me how to operate the thing. Before leaving the hut I was handed a form to sign on which

I gave the address of my next of kin and agreed to exonerate the club from all blame in the event of my death!

On this particular morning the experts were riding from Top, and as it would be nearly an hour before my turn came from Junction (which is a second starting point about 350 yards from Top) John suggested that I should go down to the platform built between Battledore and Shuttlecock, where I could watch the experts and gain confidence.

His words could have been better chosen. Hardly had I arrived there when there was a roar like an express train and an empty skeleton—weight about 150 lb.—came screaming through Battledore into Shuttlecock and over the top to crash into the woods beyond. Very comforting! I wrapped my ski jacket closer round me to shut out the cold and waited for the next dose of confidence. Soon it came. Another roar, and a rider doing about 60 m.p.h. came too high into Battledore and on to Shuttlecock, fighting madly but unsuccessfully to regain control, until he too went crashing over about three-quarters of the way round.

As I ran round to pick up the pieces he stood up and waved to indicate that he was unhurt. "Unhurt," of course, is a purely relative term and merely means that you can still stand up. This particular character had two ribs broken and was blistering the nearby trees with his language because he would not be able to ride again for some time.

The next two riders were Conner and Bibbia, the reigning kings of the run, and to see them go through was breathtaking. As in all other sports, real style is instantly recognisable even by a tyro, and makes the whole performance look absurdly simple.

Then I heard my name called. This is it, I thought. In a minute or two now I shall know whether Lord Brabazon was speaking the truth or merely setting a trap for young players.

As a beginner I was allowed to lie down and settle myself on the skeleton instead of running with it and jumping on. I adjusted my helmet and took a grip while John gave me last-minute instructions. The bell rang. I smiled at John to indicate that I was ready, and he said "Good luck" as he took his foot away. I was off!

As a débutante rider you are told to rake hard all the way. If you obey these instructions to the letter, you move off like an ice-breaker making its way to the Pole, and if you never allow yourself to gather speed it is possible to crawl all the way down. In fact, history relates that a famous film star brought himself to a standstill on the straight so that the cameramen could catch him riding the Cresta! Without going to such extremes as that, you can comfortably take anything up to 90 seconds, provided that you do not mind your friends asking "Where did you stop for tea, old boy?"

At the other extreme are those who are afraid of being thought afraid, and the young and foolish who think in their secret hearts that the whole thing is a piece of cake. They are usually wiser and nicer men after they have been picked out of the straw at Shuttlecock.

So you should strike a balance between these two extremes. You will probably find that you strike it quite soon, because if you do not rake hard at the start you gather speed like a rocket and become completely out of control almost at once.

Certainly this was my experience. I remembered that I should rake with my right foot to veer to the right and vice versa, and I forgot all else in the mad excitement that seized me as I rushed up Rise and saw Battledore and Shuttlecock ahead. I leant madly to the right and then hurled myself to the left in Shuttlecock and felt a surge of triumph as I rocketed round and knew that I was not going to go over the top. Then right again at Stream Corner and into the long straight, cannoning violently from side to side hopelessly out of control and feeling as though I was travelling at a thousand miles an hour. Natural reactions made me lean inwards as I tore through Bulpetts, round Scylla and Charybdis, over Cresta Leap and down the finishing straight, and press back and up as I was hurled up the finishing bank to come to a standstill breathless and gasping like a stranded fish, but filled with a wild satisfaction.

Lord Brabazon was right!

Rounding Shuttlecock. *The technique is to lean over to one side or to push the front round while raking hard with one foot.*

NEWS IN PICTURES

Central Council. *The 43rd Central Council meeting was held in London on 31st May. Above: Some of the Alkali and Nobel Division representatives outside the Royal Festival Hall, where the meeting was held*

For **Mr. John Rav**enscroft *of General Chemicals Division it was the last Central Council of many. He was complimented by the Chairman on a close association with the Works Council movement going back to pre-I.C.I. days with Castner-Kell*ner. *He had been secretary of the G.C.D. Council since* 1933

Bird's-eye view. *Central Council in session in the main concert hall at the Royal Festival Hall. The meeting was attended by 570 delegates and observers*

River trip. *A fleet of three launches was chartered to transport Central Council members and observers down river to Greenwich after the workers' pre-meeting on 30th May. Above. A group of Metals employees in the National Maritime Museum*

Autograph hunters *were prominent when Miss Winifred Atwell arrived at the Central Council dinner held in the I.C. House refectory. Her programme included several rock 'n' roll numbers. She was photographed (left) with Miss Janet Pe*ts *and other members of Dyestuffs Division*

Safety Trophy. *Mr. P. A. Smith, chairman of Pharmaceuticals Division, receives the I.C.I. Safety Trophy from the Chairman. The Division achieved a 74·4% reduction on their previous best accident rate—the largest reduction yet recorded by any Division. Overall I.C.I. rate for second half of* 1956 *was* 0·591

New Wilton medical centre, *built to cater for 12,000 employees, was officially opened by Mr. R. A. Banks, I.C.I. Personnel Director, on 14th May. Designed by Wilton Engineering Department, the centre includes, besides the usual casualty and consultation rooms, an X-ray department, dental, chiropody and physiotherapy rooms, a surgical ward for minor operations and a laboratory. Within a week of opening the centre had had its first thousand attendances*

Exercise TOAD *(Tactical Operation at Duchy) was staged in May by Leathercloth Division's Civil Defence volunteers at Lime Division's Duchy Quarry near Buxton. Above: The lifting rig used to pick up a casualty from a destroyed shelter 16 ft. below.*

Travelling shoe shop. *Metals Division has equipped a caravan as a shoe shop for the sale of protective footwear to employees. The van will tour the Division's factories. Right: A member of Safety Department, Mr. J. U. Gilmour (right), fits the first pair of shoes*

Pigeon Week. *July to 4th August — the Pigeon Week sponsored by Metals Division's Sporting Ammunition Department to encourage newcomers to the sport of woodpigeon shooting. Their advice to anyone wanting to shoot woodies by the sackful: use decoys and learn about hide-building and woodcraft*

Displays like this will be appearing in gunsmith's windows from 29th

Mr. David Bradbury, *a pipefitter at Gaskell-Marsh Works, completed 50 years' service on 3rd June. His son, son-in-law, sister and uncle are also employees of G.C.D.*

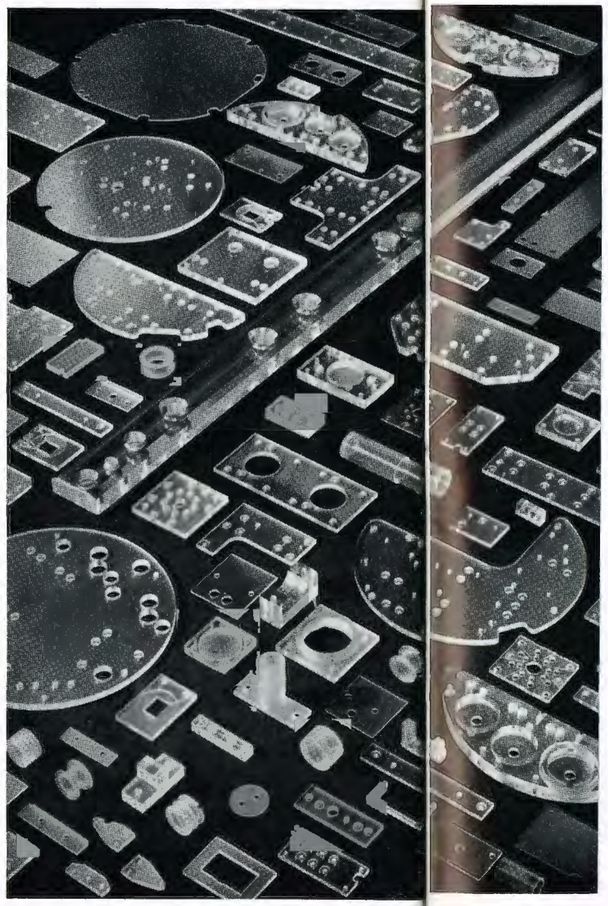
Mr. Henry Fern, *a former work study estimator at Cassel Works who completed half a century's service with the Company and its predecessors on 23rd May, retired last month at the age of 66*

Mr. W. Lawrenson *is the latest of eight men at Alkali Division's Avenue Works, Winnington, to complete 50 years' service. Mr. Lawrenson received a letter of congratulation from the Chairman in June*

50 years *with General Chemicals Division, first at the Wigg and then at the Muspratt Works of the Gaskell-Marsh group, brought a letter of congratulation from the Chairman for Mr. Walter Beesley, seen above with Dr. H. R. Hailes*

1905–57. *Mr. Wilfred Priestley, who has retired from Dyestuffs Division after 52 years' service, was photographed above with the Huddersfield Works Manager, Mr. J. C. A. Chivers, on his last day with the Company*

Celebration cruise. *Members of Ardeer Labour Department and their families on board the "Duchess of Hamilton" for a cruise on the Clyde estuary. Cost of the charter was covered by awards gained by the Department under the Safety Incentive Scheme for 1½ million accident-free man-hours*



Transatlantic telephone. *Some of the 'Perspex' which are included in the rigid submer on the Clarenville–Sydney line section of the tra cable. The repeaters have to withstand continuo piece parts made of ged repeaters used nsatlantic telephone usly 2500 volts d.c.*

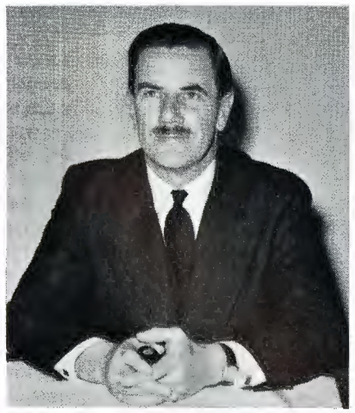
Closed-circuit *television was a feature of this year's Alkali Division darts knock-out final. A TV camera focused on the dartboard gave close-ups to spectators at receiving sets in more distant parts of the hall and in the bar next door*

PICTURES FROM OVERSEAS

Australia. *At I.C.I.A.N.Z.'s Mt. Derrimut Farm Mr. H. E. Bolte, Premier of Victoria (4th from left), inspects one of I.C.I.A.N.Z.'s shorthorn bulls. Also in the picture are I.C.I.A.N.Z. chairman Mr. K. G. Begg (2nd from left), Mr. A. Harris, manager of the Derrimut stud (5th from left), and Mr. E. Sorenson, Financial Director (7th from left). I.C.I.A.N.Z. champion bull Barium recently fetched 1450 guineas at the Sydney sales*

Steel-studded *rubber swing doors made by Mancuna Engineering Ltd. have been installed to control air movement in the anhydrite mine at Billingham*

50-ton transporter. *Developed by Lime Division for carrying 50 tons of shovel-loaded stone in their Tunstead Quarry, the truck photographed above is the largest of its kind in Britain. It is powered by a 200 b.h.p. Rolls-Royce engine. The trailer frame and body were made in the Division's workshops*



Mr. P. R. Sandars, *head of the Far East Department, has been named as I.C.I.'s new Overseas Personnel Officer. He succeeds Mr. L. H. F. Sanderson, who retires at the end of the month*

Brazil. *A view of the entrance to the grounds on the opening day at the recent agricultural exhibition held in São Paulo. This 5-day show at which I.C.I. (Brazil) exhibited was visited by over 400,000 people*

People and events . . .

BACK from a fortnight's tour of the Russian non-ferrous metals industry, DR. JAMES TAYLOR, director responsible for Metals and Nobel Divisions, was well impressed with Russian technical achievements.

Dr. Taylor went to Russia with MR. ST. J. ELSTUB, joint managing director of Metals Division, and a party of Metals Division technicians at the invitation of Mr. Komarov, Soviet Deputy Minister for Non-ferrous Metals. Mr. Komarov had been to Britain earlier this year with a delegation of Russian technicians, and was so impressed by what he saw of I.C.I. non-ferrous metal plants (particularly Kirkby copper tube factory) that he issued this special invitation.

* * *

Dr. Taylor told the Tass news agency in Moscow that the party had been especially interested in the Russians' use of radioactive isotopes for controlling the thickness of metal strip. Back in London, he said the Soviet factories they had seen in Moscow, Leningrad, Kirov and Kamensk compared very favourably with our own. The older machinery was British, German or American, but the new Russian machines were of very good quality and productivity seemed high. The standard of tidiness in the factories was striking.

* * *

For their part, the Russian factory managers were curious to know more about I.C.I. Who owned it? Dr. Taylor told them it was owned by about 300,000 stockholders, mostly small investors. The Russians had never heard of a capitalist profit-sharing scheme, and Dr. Taylor explained our own.

The I.C.I. party is able to report that travellers' tales of Russian hospitality are, if anything, an understatement. They were plied with vast meals, which started with caviar, smoked salmon, smoked sturgeon, chicken salad and cucumbers merely as appetisers and continued through innumerable courses laced with vodka, Russian wines and pink Rostov champagne. The champagne bottles were actually corked with polythene stoppers.

Outside the Kremlin the party paused for photographs—Mr. Elstub took this one. The two women are an official Kremlin guide and an interpreter.

'Alkathene' Circus

PEOPLE who have seen the new two-minute film *'Alkathene' Circus* are saying that it is the gayest, wittiest advertising "short" ever made. Readers will soon have a chance to see if they agree with this judgment, for the film will be included in cinema programmes throughout the country this summer.

It was made in Paris by a Hungarian, Etienne Raik, whose painstaking methods only allow him to complete two or three films a year. His technique is to employ animators to move the objects to be filmed between each shot. The result in the 'Alkathene' film is that gaily coloured cups, saucers, salad-shakers, kitchen brushes—200 'Alkathene' objects in all—appear to be endowed with a life of their own.

Recruiting Mathematicians

ALTHOUGH it is dwarfed by the much-discussed shortage of scientists and engineers, the shortage of specialist mathematicians in the chemical industry is quite severe.

MR. JOHN WREN LEWIS of Head Office Research Department told a conference of mathematics teachers at Oxford that I.C.I. is now discussing ways of meeting this shortage. One scheme at present being widely used is the recruitment straight from graduation at university of mathematicians, who are then sent back, as members of the I.C.I. staff, to appropriate university departments for more specialised training—as statisticians, for instance.

This reflects I.C.I.'s policy of positively discouraging too much early specialisation, either at schools or universities, in the scientists it hopes to recruit.

Incidentally, Mr. Lewis had an encouraging word for those of us who cannot even add up. It appears we may be cases for the psychoanalyst's couch. Recent psychoanalytic studies suggest

that mathematical ability fails to develop in many people because of inhibitions acquired before the age of four.

Mr. Lewis suggested that this holds out the hope of a real increase in the number of people capable of doing science—given teachers skilful enough to circumvent the inhibitions!

Grazy Gang

ALKALI Division have discovered a new kind of mowing machine. After spending quite an amount of time and money trying to find a satisfactory way of cutting the steep, grassy banks of the limebeds at Lostock and Wallerscote they have now hit on the ideal thing.

Called SHEEP (perhaps from the initials of Self-supporting Herbivore for Eating Excess Pasture), it not only mows the grass but produces from it a miraculous protein fibre and an edible beef-substitute. Three hundred of these machines are now working satisfactorily at Lostock and Wallerscote under the care of a young shepherd.

£750 *Award*

A TOOLSETTER at Steatite and Porcelain Products Ltd., MR. WALTER WILCOCK, has just been awarded £750 for one of those brilliant "simple" ideas which are the backbone of the Suggestion Scheme.

S. & P.P., part of Metals Division, is I.C.I.'s only "pottery." The raw materials there are not metals but ceramics, which are used for insulators and for countless small components for radios, telephones and the like. One of these components, a tiny tube-shaped pressing, was tiresome to produce because the action of the press left an unwanted foreign body inside the tube. This had to be removed by a hand operation, and as the quantities produced ran into many millions a year some idea of its nuisance value can be readily assessed.

Mr. Wilcock's idea was to use compressed air to blow out the foreign body (technically known as "flash") from the tube at the moment that it left the press die. Trials proved successful and the "Wilcock blower" is now in operation, saving the Company a large amount of money and Steatite employees a very tedious job.

This award is the highest ever made in Metals Division, and is the second highest so far made under the Company's Suggestion Scheme.

The Things They Say

SOMEBODY, possibly the anonymous man in the advertisement who is always exulting "Glad I don't work for a big outfit," wrote to one of the big outfit's labour officers recently, somewhat in these terms:

> "My wife is always on at me to get a job with your company. I'm quite happy in my present job, but as I say, she's always on at me. Could you please interview me and turn me down."

The labour officer interviewed him, and turned him down.

Thus, and in a thousand kindred ways . . .

The End of Husk?

"I DON'T think there's going to be any more worry about husk," said MR. STEPHEN CHEVELEY, chairman of C.A.C.

He was speaking recently to a conference of agricultural journalists, all of whom knew only too well what husk is and how much it costs the country—more than £3 million a year in cattle alone, perhaps half as much again in sheep and pigs. When Mr. Cheveley told them that Pharmaceuticals Division had discovered a new treatment, 'Helmox,' for the disease, they were obviously impressed.

What the farmer knows as husk is the invasion of the animal's lungs by worms which are picked up from pasture in the larval stage. The animal develops a cough, then pneumonia, becomes emaciated and may eventually die. Once the disease gets a hold in a farmer's herd it may ruin him financially. It is responsible for enormous losses of cattle, sheep, pigs and goats throughout Europe and North America.

'Helmox' can be given to animals by the farmer and will rid them of lungworms in three weeks. Its effect is to stupefy the worms and force them to move up the windpipe to be swallowed and destroyed.

The chemical itself—cyanacethydrazide—is not new. But this application of it is I.C.I.'s own discovery, made by a team of veterinary scientists, biologists and chemists. Before the drug was put on the market Pharmaceuticals Division carried out trials involving some 600 animals.

Magnums and Mahua

DO you know what *pulque* is? Or *mahua*? If not, you can find out in a new Pelican book, *Wines and Spirits*

NEW APPOINTMENTS

Some recent appointments in I.C.I. are:

Alkali Division
Mr. J. K. Steward, Deputy Chief Accountant.

Central Agricultural Control
Mr. J. Crozier. A director.

Metals Division
Mr. J. Hamilton. Chief Electrical Engineer, Division Engineering Department.
Mr. S. P. Davies. Deputy Chief Accountant.
Mr. R. J. Doyle. General Manager, Ammunition and Metal Fabrication Departments.

Nobel Division
Dr. A. G. Short. Manager, Technical Department.
Mr. J. de Normann. Manager, Development Department.

Plastics Division
Mr. E. G. Williams. Joint Managing Director.
Mr. R. G. Hutchings. Works Manager, Darwen.

Wilton Council
Mr. S. D. Lyon. Engineering Director.

(Pelican Books, 5s.). The author is MR. L. W. MARRISON, a chemist who works mainly on spectroscopy at the Widnes research laboratories of General Chemicals Division.

Pulque is a Mexican drink made from cacti, and the *mahua* spirit of Eastern India is distilled from flowers that have "a disgusting smell of mice," Mr. Marrison informs us. He does so

in the course of a lively account that ranges over almost the entire field of alcoholic beverages.

Mr. Marrison devotes a proper proportion of the book to wines, from vin ordinaire to Château Lafite. He is one up on most people in being able to account chemically and biologically for the mysterious things that go on in vats and stills, but for tyros at the winemanship game he has some refreshingly down-to-earth tips.

Mr. Marrison claims that he has been interested in alcoholic drinks ever since he joined the Band of Hope at an early age, but it seems just as likely that his thirst was brought on by a spell of drilling for potash in the Pyrenees in 1929.

He has published three novels and hopes one day to bring out a sequel to *Wines and Spirits*.

NEWS IN BRIEF

ROYAL OPENING. The *Cutty Sark*, the last of the sailing clippers, was equipped with new rigging early in June in preparation for the official opening by the Queen later in the month. The new ropes—of 'Terylene'—have been made up by the Gourock Ropework Co., who supplied the original hemp cordage.

JEWEL FOR COUNCIL. A new jewel for the chain of office of Runcorn U.D.C.'s chairman was presented by Mr. G. K. Hampshire, General Chemicals Division chairman. The original chain of office was presented by Sir John Brunner 60 years ago.

IDEAS GALORE. No less than ten adopted suggestions under the I.C.I. Suggestion Scheme during the past year brought a £5 award for Mr. James Young of Westquarter Factory. The £5 is in addition to the awards he received under the scheme.

HELP WITH COLOUR. To help householders choose harmonious colour schemes, Paints Division Colour Advisory Service have produced a Colour Comparator. It provides a key to a number of alternative colour schemes for each of 132 predominant furnishing shades.

ELECTED PRESIDENT. Dr. Bernard Raistick, research director of Scottish Agricultural Industries Ltd., has been elected president of the Fertiliser Society.

25,000 CALLS A DAY. Billingham Division's internal automatic telephone exchange handles about 25,000 calls a day, or 6¼ million a year. A new exchange now coming into operation will be the biggest private exchange of its type in the country, with a capacity of 2000 phones.

400 YEARS SERVICE. With the completion of half a century's service last month by Mr. W. Lawrenson, Alkali Division's Avenue Works now has eight men with 50 or more year's service with the Company and its predecessors.

NEW BUTANOLS PLANT. A second large-scale carbonylation plant has been started up at Billingham for the production of butanols, increasing I.C.I.'s output of butanols sevenfold. The biggest consumer of butanols is the paint industry; other users include manufacturers of pharmaceuticals, printing inks and hydraulic brake fluids.

MORE SCHOLARSHIPS. The I.C.I. transfer scholarship scheme is to be extended to Bristol, Birmingham and Sheffield Universities for the 1957/58 academic year. Three new scholarships to each university have been approved by the I.C.I. Board in addition to the 50 sanctioned last year.

FROM EIGHT TO EIGHTY-EIGHT. Exhibitors at the Kynoch Works Home Crafts Exhibition held on 1st June ranged from Arabella Melville, eight-year-old daughter of a member of Engineering Dept., to the 88-year-old mother of one of the Public Relations staff. Among the 160 entries were a baptismal font and a 15 foot canoe.

Work Study

TWO unusual Work Study open days were held by I.C.I. in London recently. At one about 80 professional, administrative and trade union people were introduced to the Work Study approach. Their common interest was in the effectiveness of hospital service. The other was attended by the Minister of Agriculture, MR. HEATHCOAT AMORY, and some of his officials, members of the Agricultural Advisory Service and officers of the National Farmers' Union.

The hospital service's interest in Work Study is a tentative but growing one; some measure of it was suggested by the interest shown in the open day by the Minister of Health, MR. DENNIS VOSPER.

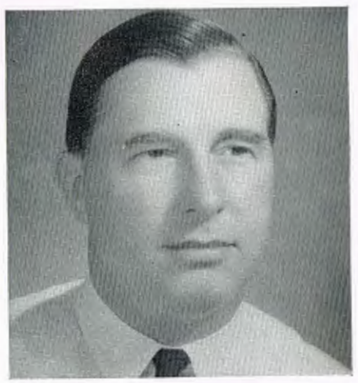
In agriculture the need and scope for Work Study is arousing wide interest, and the definite prospect of capital grants from the government for farm improvements has set many farmers thinking in terms of properly planned buildings.

C.A.C. has a Work Study Unit consisting of five men: recently they have been studying single farm operations, with promising results. The main job of the unit now will be to show the possibilities of Work Study in farming and arouse even wider interest in the subject.

Success Story

"LAB. boy to chairman" stories are uncommon enough even in I.C.I. to be remarkable. An example that few people may know about is that of MR. M. F. CUTLER, who has just retired as chairman of I.C.I. (Malaya).

He started his career at the age of 16 in the research laboratories of British Dyestuffs Corporation Ltd., and after six years there went to Manchester University to study chemistry. He gained an honours degree and returned to B.D.C. as a colourist.



Mr. M. F. Cutler

His connection with the Far East began when he was sent out to China to get experience of overseas selling. This he did first in a branch office of I.C.I. (China) in Manchuria, then in their head office in Shanghai. He joined I.C.I. (Malaya) at Singapore on its formation in 1930, and was appointed chairman in 1950. The year before he retired he had the satisfaction of seeing the company celebrate its silver jubilee and achieve a record turnover. In 1956–57 he was chairman of the Singapore Chamber of Commerce.

How to grow Saintpaulias

SAINTPAULIAS, shown on our front cover this month, are better known by the rather misleading name of African violets. Although they come from East Africa—where Baron Walter von Saint Paul Illaire discovered them 60 years ago—they are no relation to the English violet.

How do you grow them? One of the Fernhurst experts says it is easy if you have a greenhouse which can be heated to 65° F. Then you merely take a mature Saintpaulia leaf with about an inch of stem and insert it in a mixture of peat and sand. The stem puts out roots in about a fortnight and new leaves appear about a fortnight after that.

At Fernhurst the plantlets are put into boxes at about 8 weeks old and transplanted into 3½ in. pots at 16 weeks; but it is perfectly possible to root cuttings direct in the pots. The soil used for growing in the pots is John Innes No. 1 with a little peat added to make it lighter.

The Saintpaulias shown on the cover have flowered continuously from August 1956 until June this year. Incidentally, they are grown at Fernhurst for decoration, and are not for sale.

CONTRIBUTIONS for this feature will be welcomed, and those accepted will be paid for.

Awards

A SPECIAL gift for people who complete 50 years' service with the Company may be introduced. In reply to a unanimous resolution at Central Council, Sir Alexander Fleck said that the Board would give the idea their most sympathetic consideration.

Another long service matter came up as the result of a resolution made at the previous Council. This asked that if an employee died before retiring but after completing 35 years' service, his retirement gift should be given to his dependants. The Board's answer, relayed by Mr. Grint, was that they did not feel that this would be in keeping with the original idea of retirement gifts.

P.M.'s Maid

MRS. LOUISA DICKINSON, of Billingham Commercial Works, is following political events with close interest these days.

For four years in the 1920s Mrs. Dickinson was a maid with the family of Mr. Macmillan, now Prime Minister. Her link with the family was remembered when Mr. Julian Amery, M.P., visited Stockton recently, for Mrs. Amery, one of the Prime Minister's two daughters, was Miss Carol in the days when Mrs. Dickinson was at the Macmillan home in London.

Mrs. Dickinson met Mr. Amery on his visit, and was able to tell him some of her reminiscences.

Staff Pension Increases

SHORTLY after increases in pensions for members of the Workers' Pension Fund had been announced at Central Council, posters went up to announce similar increases for members of the I.C.I. Staff and Foremen's Pension Funds from 1st July. There was also news of a new cash payment to the widows or children under 18 of members who die in service before completing 10 years' pensionable service. The increases were made possible by the Company providing the money.

The increases are shown below:

1. *Increases affecting pensions granted up to 31st December 1962 will be at the following rates.*

Pensions granted in respect of Retirements	*Percentage Increase*
On or before 31st December 1953 ..	15
During 1954	13½
,, 1955	12
,, 1956	10½
,, 1957	9
,, 1958	7½
,, 1959	6
,, 1960	4½
,, 1961	3
,, 1962	1½

2. *Minimum scale pensions will be increased as follows:*
   Males from £104 per annum to £120 per annum.
   Females from £80 per annum to £90 per annum.
   Minimum pensions payable to widows and children will be increased in proportion.

3. *Death before completion of 10 years' pensionable service*
   At present the benefit from the Fund payable in these circumstances is a refund of the member's own contributions plus interest. The rules of both funds will be altered to provide that in the case of death of a married man on or after 1st July 1957, and who leaves a widow or children under age 18, in addition to paying the refund to the man's estate a payment will be made to his widow or children of an amount equal to the sum payable to the estate.

Our Next Issue

ONE of the most successful apprentice training schemes in the country is that run by Wilton Council. Dorothy Thomas of Metals Division took a trip up there to see what was going on, and in our August issue she describes the scheme in action.

In the four-colour section we have an article on how to grow dahlias by Donald Cambell, well known in gardening circles in Dyestuffs Division.

Next, Dr. James Taylor, director in charge of Metals and Nobel Divisions, writes of the fortnight he spent looking at the non-ferrous metals industry of the U.S.S.R. (see page 246). His article will be illustrated with photographs taken by other members of the I.C.I. party.

Lastly, Courtenay Blackmore of Central Labour gives us a page out of his lurid life as a young R.N.V.R. lieutenant in the Far East during the war. It is entitled "On Entertaining a Very Young Lady."

Have We Offended You?

By Herbert Watkin

Being the true story of some incidents in the life of a kind-hearted works councillor.

EVERY year a children's holiday camp is organised in North Wales by an Alkali Division charity. When your workmates learn that you are going to spend a week at this camp they imagine you are in for a good holiday. Hence the saying "Yer on a good 'un!"

Last year there were 180 children—92 boys and 88 girls—aged from 9 to 15. That meant, in the first place, 180 palliasses to be filled with straw and taken to the various chalets. The next job for myself and the four other members of the advance party was to take three blankets to each of the 180 bunks. This task completed, it was teatime. Any hopes we might have had of relaxing, however, were brusquely swept aside by the arrival of forty children belonging to a different party. We found that we had put palliasses and blankets in four chalets allotted to them. They were most appreciative. One of their masters thanked us very much and said he was most obliged. "Not at all," we replied, starting to fill more palliasses for our own party as fast as we could.

We had barely finished when our children arrived, and I and another helper found ourselves in charge of 32 boys. I looked them over and made a mental note of one or two tough-looking customers.

Now for the evening meal. . . .

"Mr. Watkin, I've lost my knife and fork," said one little boy.

"Never mind, I'll get you some more" I replied. Then the resident manager intervened: "Oh no. We wouldn't have any left in the camp if we started lending them out."

I began dishing out hotpot.

"Mister, where's the meat?"

Obviously my ladle had missed when I had filled that little girl's plate.

After we had washed up and had our own meal it was time to see that my boys were in bed. I was confronted by fifty lads who had tried their palliasses. They announced in no uncertain terms that there was not enough straw in them.

We began again with the straw.

At last I checked the boys in bed. And so to bed myself.

At 1 a.m. came a voice: "Mr. Watkin, two lads are fighting."

I ran to my boy's chalets, only to discover that the contestants were the charges of another helper. However, I sorted out the trouble and returned to bed.

At 4 a.m. came the sound of loud voices and much running about. On the field behind our chalets fifty boys were playing football and a full-scale cricket match was in progress. This time I decided it was not worth getting into bed again.

The next afternoon another works councillor and I organised a cricket match. Winning the toss, I promptly decided to field. The opposing skipper remarked on my generosity, but there was method in the move. Past experience had taught me that if you bat first you will find five or six boys missing when it comes to your side's turn to field. This happened again this time—to our opponents.

Next day after lunch my boys wanted to climb the hill behind the camp. We set off on the two-mile trek to the summit, where we eventually arrived without mishap—apart, that is, from the small boy who somehow contrived to tear the seat out of his trousers.

When we tramped back into camp it was almost teatime. It was then that a youngster reported that he had left his jacket on the top of the hill. I had no alternative but to go back with him to find it. On the way down again I must have expressed my feelings aloud.

"Have I offended you?" enquired the youngster, quoting a current radio quip.

That night when I returned to my chalet I found a pile of rocks and stones in my bed. With an air of resignation I threw them out, straightened the bed and once more settled down to sleep.

The next day thirty boys asked another helper and myself if we would take them to the cinema in Rhyl. Dressing hurriedly after lunch, I found my right brown shoe and my left black one, but my left brown one and right black one had disappeared. There was nothing for it but to wear the odd colours. After all, I thought, nobody would know me in Rhyl.

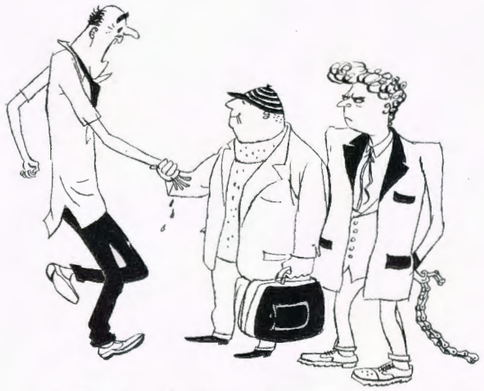
We arrived outside the cinema, where I collected a shilling from each boy. This was a necessary precaution. Two years ago a certain Winnington Works councillor went for a ride on a roundabout accompanied by 28 children. When the man in charge came to collect the money, each of the children referred him to the works councillor, who had to pay for the lot.

After the film we started walking through the crowded streets to the bus terminus. It was not long before I became aware of sidelong glances in the direction of my feet, then muffled comments and some giggling from the women shoppers and holidaymakers.

A final sally caught me that night as I tried to put on my pyjamas. The sleeves and trouser legs had been stitched up. Wearily I abandoned them.

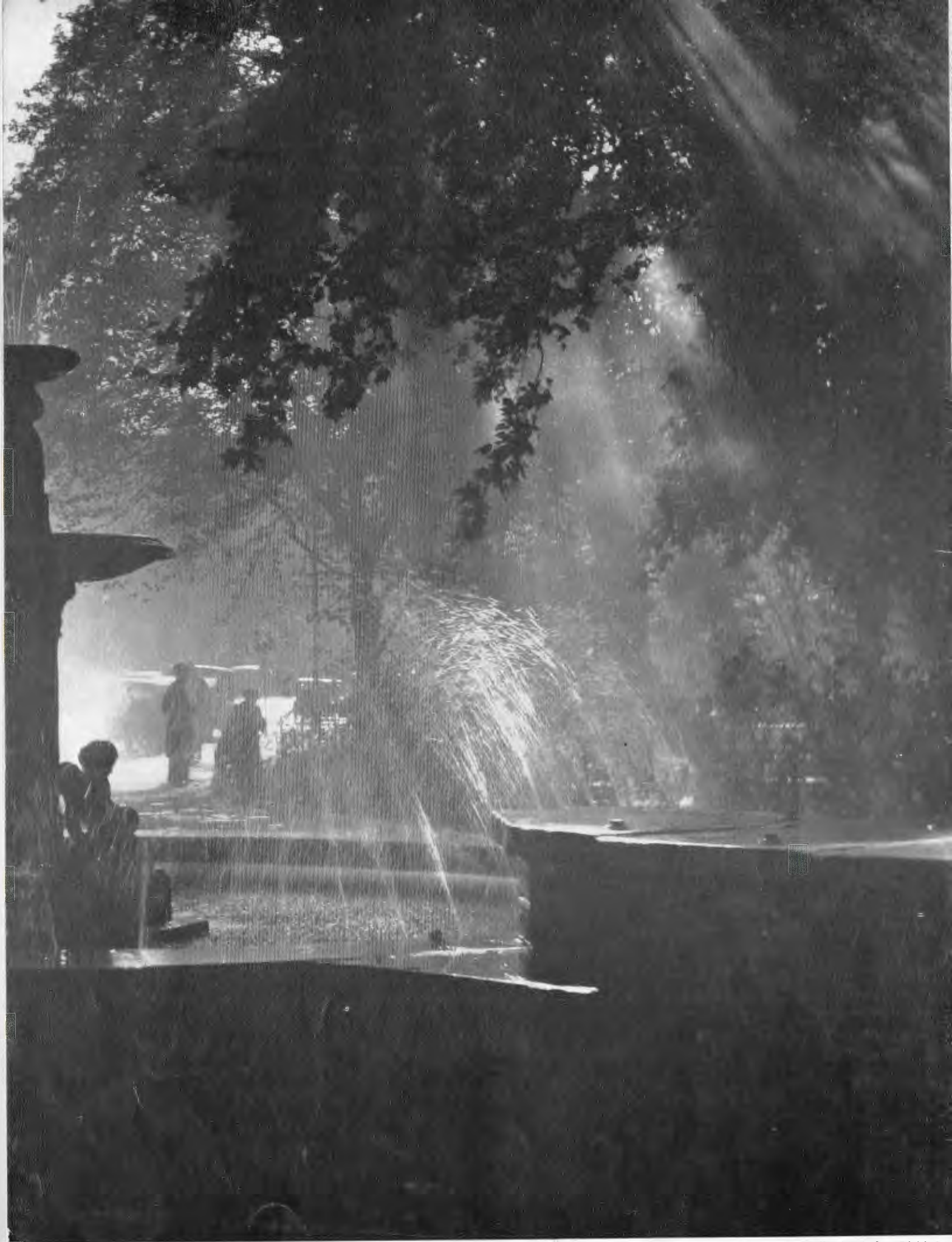
When I unpacked my pyjamas back home and handed them to my wife for unstitching, a large piece of paper was inside. It bore the words: "Have we offended you?"

. . . said he was most obliged



. . . made a mental note of one or two tough customers

. . . football and cricket in full swing at 4 a.m.



Russell Square

Photo by A. Walker (Billingham Division)